CATALOGUE

OF THE

AGRICULTURAL COLLEGE

OF

PENNSYLVANIA.

1871.

PHILADELPHIA:
JAS. B. RODGERS CO., PRINTERS, 52 & 54 NORTH SIXTH ST.
1871.

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AGRICULTURAL COLLEGE OF PENNSYLVANIA.

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Secretary of the Commonwealth, Harrisburg, Pa.

JAMES CALDER, D.D.,
President College Faculty, Agricultural College, Pa.

JOHN C. MORRIS,
President of the State Agricultural Society, Scranton, Pa.

Elected Members.

TERM EXPIRES SEPTEMBER, 1872.

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Gen. HARRY WHITE, Indiana P. O., Indiana Co.
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A. BOYD HAMILTON, Esq., Harrisburg P. O., Dauphin Co.

TERM EXPIRES SEPTEMBER, 1874.

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PROFESSOR OF ENGLISH LITERATURE, AND THE LATIN AND GREEK LANGUAGES.

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PROFESSOR OF GENERAL AND AGRICULTURAL CHEMISTRY AND PHYSICS.

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MARY E. BUTTERFIELD, S. B.,
PRECEPTRESS, AND INSTRUCTOR IN GERMAN.

SARAH E. ROBINSON,
INSTRUCTOR IN PIANO MUSIC.

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WILLIAM C. HUEY,

Superintendent of Central Experimental Farm,

P. O.:—Agricultural College, Centre Co.

JOHN I. CARTER,

Superintendent of Eastern Experimental Farm,

P. O.:—West Grove, Chester Co.

ANDREW J. HAMILTON,

Superintendent of Western Experimental Farm,

P. O.:—Indiana, Indiana Co.

ISAAC KAUP,

Master Mechanic.

PATRICK PEARL,

Gardener.

SOPHIA S. HUNTER,

Steward.

ANN CONDILL,

Matron.

Officers of the College Military Company.

Captain.

FRANK S. BURROWES.

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2d.—SAMUEL W. DOUGLASS.

Sergeants.

1st.—CURTIS G. CAMPBELL.
2d.—J. ALDER ELLIS, Jr.
3d.—SAMUEL A. EASLEY.

Corporals.

1st.—BOYD W. SMITH.
2d.—GEORGE W. FULMER.

Drummer.

WILLIAM D. ISETT.

STUDENTS.

SENIORS.

NAMES.	RESIDENCES.
BURROWES, FRANCIS S.,	Lancaster, Lancaster Co., Pa.
MCCREARY, PITT L.,	Avonia, Erie Co., Pa.

JUNIORS.

ALLISON, WILLIAM M.,	Potter's Mills, Centre Co., Pa.
BRUNER, WILLIAM S.,	Columbia, Lancaster Co., Pa.
CRANDALL, LATHAN A.,	Ames, Montgomery Co., N. Y.
DOUGLASS, SAMUEL W.,	Whitestone, N. Y.
EWING, REBECCA H.,	Angola, Steuben Co., Ind.
ISETT, WILLIAM D.,	Spruce Creek, Huntingdon Co., Pa.
MCKEE, CHARLES H.,	Oakdale Station, Allegheny Co., Pa.
STARR, JAMES F.,	Montoursville, Lycoming Co., Pa.
WRIGHT, F. PAUL,	Chambersburg, Franklin Co., Pa.

STUDENTS.

SOPHOMORES.

NAMES.	RESIDENCES.
ADKINSON, ALVAH W.,	East Enterprise, Switzerland Co., Ind.
BURKHOLDER, THOMAS W.,	Harrisburg, Dauphin Co., Pa.
CAMPBELL, CURTIS G.,	Johnstown, Cambria Co., Pa.
CROSS, ELLEN A.,	Omro, Winnebago Co., Wis.
CRUMBAUGH, FREDERICK,	Chicago, Cook Co., Ill.
DOWNING, ORRIEN P.,	Brooklyn, N. Y.
EASLEY, SAMUEL A.,	Cireleville, Williamson Co., Texas.
ELDRED, WILLIAM W. P.,	Lock Haven, Clinton Co., Pa.
ELLIS, J. ALDER, JR.,	Hughesville, Lycoming Co., Pa.
ISETT, JOHN B.,	Spruce Creek, Huntingdon Co., Pa.
MCFARLANE, J. KYLE,	Agricultural College, Centre Co., Pa.
MIFFLIN, J. DEVAUX,	Columbia, Lancaster Co., Pa.
ROBINSON, SARAH ELLEN,	Agricultural College, Centre Co., Pa.
THOMPSON, JAMES I.,	Centre Furnace, Centre Co., Pa.
WILLARD, WILLIS J.,	Jonesboro, Union Co., Ill.

STUDENTS.

FRESHMEN.

NAMES.	RESIDENCES.
BROWN, JAMES A.,	Cedar Springs, Clinton Co., Pa.
CALDER, CHARLES M.,	Agricultural College, Centre Co., Pa.
CALDER, JAMES K.,	Agricultural College, Centre Co., Pa.
CALDER, WILLIAM J.,	Harrisburg, Dauphin Co., Pa.
DEVLING, MARY E.,	Bellefonte, Centre Co., Pa.
FOSTER, WILLIAM L.,	Boalsburg, Centre Co., Pa.
FULMER, GEORGE W.,	Williamsport, Lycoming Co., Pa.
GIBBONEY, ROBERT H.,	McVeytown, Mifflin Co., Pa.
GRUGAN, ALEXANDER,	Hyner's Run, Clinton Co., Pa.
HAMPTON, ROBERT S.,	Allegheny City, Pa.
HARVEY, WILLIAM I.,	Lock Haven, Clinton Co., Pa.
HOUSTON, HENRY E.,	Harrisburg, Dauphin Co., Pa.
HULBURT, LEWIS C.,	Philadelphia, Pa.
HUTCHISON, GEORGE G.,	Warrior's Mark, Huntingdon Co., Pa.
HUTCHISON, LIZZIE W.,	Warrior's Mark, Huntingdon Co., Pa.
LYTLE, SAMUEL F.,	Agricultural College, Centre Co., Pa.
MCDOWELL, JAMES EDW.,	Salona, Clinton Co., Pa.
MCNEAL, HORACE,	Philadelphia, Pa.
PATTERSON, WILLIAM H.,	Yellow Springs, Blair Co., Pa.
PIPER, ROBERT F.,	Williamsport, Lycoming Co., Pa.
SCHELLENBERG, CHARLES E.,	Lewistown, Mifflin Co., Pa.
SLOAN, JAMES F.,	Lock Haven, Clinton Co., Pa.
SMITH, BOYD W.,	Ligonier, Westmoreland Co., Pa.
WALLACE, JOHN J.,	Coal Bluffs, Washington Co., Pa.
WILLARD, CHARLES F.,	Jonesboro, Union Co., Ill.

STUDENTS.

PREPARATORY.

NAMES.	RESIDENCES.
ALBA, WILLIAM E.,	Williamsport, Lyeoming Co., Pa.
BROWN, JAMES T.,	Loek Haven, Clinton Co., Pa.
CALDER, JAMES P.,	Pleasantville, Harford Co., Md.
CALDER, A. RUSSELL,	Agricultural College, Centre Co., Pa.
CLARK, JOSEPH,	Williamsport, Lyeoming Co., Pa.
CLEMENTS, JOSEPH W.,	Bellefonte, Centre Co., Pa.
DEVLING, E. KATE,	Bellefonte, Centre Co., Pa.
ELDRED, JAMES P.,	Lamar Mills, Clinton Co., Pa.
FORMAN, EZEKIEL,	Easton, Talbot Co., Md.
GIBSON, R. WIER,	Williamsport, Lyeoming Co., Pa.
HESS, EDWIN W.,	Linden Hall, Centre Co., Pa.
JONES, J. MILEY,	Harrisburg, Dauphin Co., Pa.
LADD, WILLIAM A.,	West Chester, Chester Co., Pa.
MCALPINE, WILLIAM B.,	Baltimore, Md.
MCDONALD, R. ALEXANDER,	Pittsburgh, Allegheny Co., Pa.
OSBORNE, A. EDGAR,	Media, Delaware Co., Pa.
ROBINSON, EDWARD O.,	Agrieultural College, Centre Co., Pa.
RUSSELL, GEORGE L.,	Lewistown, Mifflin Co., Pa.
RUSSELL, WILLIAM C.,	Lewistown, Mifflin Co., Pa.
SCHEID, HENRY J.,	Loek Haven, Clinton Co., Pa.
SHAFFER, W. WALLACE,	Pittsburgh, Allegheny Co., Pa.
STEARNS, CHARLES R.,	Williamsport, Lyeoming Co., Pa.
SWARTZ, FREDERICK K., JR.,	Harrisburg, Dauphin Co., Pa.
WATSON, CHARLES J.,	Allegheny City, Pa.

COURSES OF STUDY.

Agricultural Course.

PREPARATORY.

Orthography,
Reading,
Penmanship,
English Grammar,
Geography (Political and Mathematical),
Map Drawing,
History of United States,
Declamation,
Arithmetic (Written and Mental),
Elementary Algebra (to Simple Equations),
Latin Grammar and Reader (Optional).

FRESHMAN.

SPRING TERM.

General Agriculture (*Allen*),
Elementary Algebra (to Quadratics),
Book Keeping (Single Entry),
Elements of Physics,
Elementary Botany,
English Composition and Declamation,
Higher Arithmetic,
Cæsar and Latin Composition (Optional).

FALL TERM.

General Agriculture (Continued),
Elementary Algebra (Completed),
Book Keeping (Double Entry),
English Composition and Declamation,
Botany, Analytical,
Outlines of Chemistry,
Virgil's Æneid (Optional).

SOPHOMORE.

SPRING TERM.

Horticulture (Lectures),
Farm Implements,
Soils,
Domestic Animals,
Algebra (Through Progressions),
Geometry (Six Books),
English Literature,
Inorganic Chemistry,
Botany (Economic), Lectures,
Modern Languages (Optional),
Cicero's Orations and Latin Composition (Optional).

FALL TERM.

Soils (Continued),
Cultivated Plants,
Stock Raising,
Algebra (Completed),
Geometry (Completed),
English Literature,
Organic Chemistry,
Zoology, Systematic,
Elements of Human Anatomy and Physiology,
Blow Pipe Analysis,
Horace's Odes (Optional),
Modern Languages (Optional).

JUNIOR.

SPRING TERM.

Fertilizers,
Insects,
Weeds,
Farm Accounts,
Zoology (Economic),
Trigonometry,
Surveying,
Physics,
Political Economy,
Qualitative Analysis,
Agricultural Chemistry (Lectures).

FALL TERM.

Farm Buildings,
Veterinary,
Rural Laws,
Anatomy of Vertebrata,
Surveying (Completed),
Civil Engineering,
Industrial Drawing,
Physics,
Evidences of Christianity,
Constitution of United States and of Pennsylvania,
Quantitative Analysis,
Agricultural Chemistry (Lectures).

SENIOR.

SPRING TERM.

Rural Economy,
Meteorology and Climatology,
Original Essays and Discussions on Agricultural Subjects,
Principles of Geology,
Civil Engineering (Completed),
Physics,
Mineralogy and Crystallography,
Logic,
Shades, Shadows and Perspective (Optional).

FALL TERM.

Rural Economy,
Landscape Gardening,
Original Essays and Discussions on Agricultural Subjects,
Economic Geology.
Astronomy,
Moral Philosophy,
Mental Philosophy,
Rhetoric.

Scientific Course.

PREPARATORY.

Orthography,
Reading,
Penmanship,
English Grammar,
Geography (Political and Mathematical),
Map Drawing,
History of United States,
Declamation,
Arithmetic (Written and Mental),
Elementary Algebra (to Simple Equations).

FRESHMAN.

SPRING TERM.

General Agriculture (*Allen*),
Elementary Algebra (to Quadratics),
Book Keeping (Single Entry),
Elements of Physics,
Elements of Botany,
Declamation and Composition,
Higher Arithmetic.

FALL TERM.

General Agriculture, (Continued,)
Elementary Algebra (Completed),
Book Keeping (Double Entry),
English Composition and Declamation,
Botany (Analytical),
Outlines of Chemistry.

SOPHOMORE.

SPRING TERM.

Algebra (through Progressions),
Geometry (Six Books),
English Literature.
Inorganic Chemistry,
Botany (Structural and Systematic),
French or German.

FALL TERM.

Algebra (Completed),
Geometry (Completed),
Organic Chemistry,
Zoology, Systematic,
Elements of Human Anatomy and Physiology,
Blow Pipe Analysis,
English Literature (Elective),
Freuch or German (Elective).

JUNIOR.

SPRING TERM.

Trigonometry,
Surveying (with Practice),
Chemical Theory,
Physiology (Comparative),
Physics,
Political Economy.

FALL TERM.

Anatomy of Vertebrata,
Surveying (Completed),
Civil Engineering,
Physics,
Evidences of Christianity,
Constitution of United States and of Pennsylvania,
Qualitative Analysis,
Geometry (Analytical and Descriptive).

SENIOR.

SPRING TERM.

Principles of Geology,
Civil Engineering (Completed),
Shades, Shadows and Perspeetive,
Physics,
Mineralogy and Crystallography,
Logic,
Qualitative Analysis,
Organic Chemistry (Leetures),
Differential Calculus (Optional).

FALL TERM.

Eeonomic Geology,
Analytic Mechanics,
Technieal Chemistry (Lectures),
Quantitative Analysis,
Moral Philosophy,
Mental Philosophy,
Rhetoric,
Integral Calculus (Optional).

Classical Course.

PREPARATORY.

Orthography,
Reading,
Penmanship,
English Grammar,
Geography (Political and Mathematical),
Map Drawing,
History of United States,
Declamation,
Arithmetic (Mental and Written),
Elementary Algebra (to Simple Equations),
Latin Grammar and Reader,
Greek Grammar.

FRESHMAN.

SPRING TERM.

Elementary Algebra (to Quadratics),
Book Keeping (Single Entry,
Elements of Physics,
Elements of Botany,
English Composition and Declamation,
Cæsar and Latin Composition,
Xenophon's Anabasis and Composition,
General Agriculture (*Allen*).

FALL TERM.

Elementary Algebra (Completed),
Book Keeping (Double Entry),
English Composition and Declamation,
Botany (Analytical),
Virgil's Æneid,
Herodotus,
General Agriculture, (Continued).

SOPHOMORE.

SPRING TERM.

Algebra (Through Progressions),
Geometry (Six Books),
Chemistry (Inorganic),
English Literature,
Botany (Economic), Lectures,
Cicero's Orations and Composition.
Homer's Iliad,
Modern Languages (Optional).

FALL TERM.

Algebra (Completed),
Geometry (Completed),
English Literature,
Chemistry (Organic),
Principles of Zoology,
Horace's Odes,
Plato's Apology and Greek Composition,
Modern Languages (Optional).

JUNIOR.

SPRING TERM.

Trigonometry,
Surveying,
Chemical Theory,
Physics,
Horace's Epistles,
Thucydides,
Political Economy.

FALL TERM.

Evidences of Christianity,
Geometry (Descriptive and Analytical),
Tacitus,
Œdipus Rex,
Physics.

SENIOR.

SPRING TERM.

Principles of Geology,
Shades, Shadows and Perspective,
Logic,
Tacitus,
Demosthenes de Coronâ,
Original Declamations,
Hebrew (Optional),
Differential Calculus (Optional).

FALL TERM.

Astronomy,
History of Greek and Roman Literature,
Rhetoric and Original Declamations,
Mental Philosophy,
Moral Philosophy,
Hebrew (Optional).
Integral Calculus (Optional).

General Principles.

THE AGRICULTURAL COLLEGE OF PENNSYLVANIA is a State, and not a Denominational, Institution. This Institution, the aim of which is to combine practical with theoretical culture in the higher departments of Education, and especially to promote improvement in Agriculture, the Mechanic Arts and the application of those natural and abstract Sciences which have most direct bearing upon the every-day affairs of life, is now in the thirteenth year of its history. The prospects, not only from experience, but from the solid progress thus far achieved, are such as to justify full confidence in final and early success. This College claims to have accomplished as much as any in the land toward the true purpose of its class—that of *making practical while imparting a liberal education to the working classes.* Here, Farming is not an *ad captandum* branch in the catalogue, but a regular and productive pursuit of the student; Chemistry is practical analysis in the Laboratory, based upon the principles of the text-book; Botany is the collection and study of the plants themselves, not of their pictures; Mathematics carried into the field, constitutes the Practical Surveyor; and so of other studies.

In both departments, therefore, the practical as well as the theoretical, it is claimed that the operations of the institution have been successful. On the one hand, the studies and mental exercises of the student in the recitation and lecture room have been as satisfactory and his progress as substantial, as if his leisure hours had been given to useless sport, aimless reading, or other and worse indulgences; while, on the other hand, by the labor of ten hours a week, on the farm or in the garden, laboratory, or other field of practical science, not only have his health of body and mind been promoted and his theoretic studies rendered practically valuable, but the work of a large farm has been performed, and its various crops have been well planted, cultured and housed.

It would occupy too much space here to set forth the minute parts of the plan by which these results have been accomplished; and as the experience of the past has rendered necessary several modifications, it is more than probable that a larger sphere of action will indicate further changes. Leaving this, therefore, to the formative control of circumstances, the following may be stated as the general fundamental principles of the educational system of this institution:

1. Intended for the benefit of the agricultural and other industrial classes, many of whose youth are backward in their educational preparation, no qualifications for admission to the Preparatory Department will, till further

notice, be exacted beyond the acquirements of an ordinary English education: provided the applicant be fourteen years of age, with sound intellect, good health, and proper moral character. Students of more advanced age and scholarship will be admitted to the Class for which they may be found qualified, on examination.

II. Certain branches of knowledge are indispensable to all, without reference to class or profession. These are: 1. The branches embraced in what is called a sound English education; 2. A knowledge of the structure and laws of health of the human body; 3. A knowledge of the constitution and government of the country; and 4. A knowledge of the great principles of man's relation to the Deity;—and from the study of these, no student can be exempted. But beyond these, the parent having the right to select the life pursuits of his children, their studies shall be confined to such branches and exercises as the Faculty of instruction shall deem proper in preparation therefor.

III. The usefulness of every branch of human knowledge depending less on its intrinsic nature than upon the mode of its acquisition, the art shall here be taught with the science, the practice with the theory, the use with the learning; so that what is acquired from the book or the professor, may be always at hand for the actual purposes of life.

IV. Some employments requiring more elaborate, and all somewhat different preparation, to meet various demands, there will be in this institution, *three courses*, viz: the Agricultural, the Scientific and the Classical, at the end of each of which a Diploma will be grauted to such, respectively, as shall be found proficient.

V. Elementary studies and exercises are so arranged that there is as little instruction for special pursuits as possible in the first three classes, where all are to study the rudimental branches together, diverging mainly toward particular employments in the studies, exercises and operations of the Junior year.

VI. No student is to be promoted to a higher class except on merit,—the design being to make good scholars and not merely to grant degrees.

VII. Labor being conducive to the mental and physical health of all, especially in youth, and the culture of the earth in some form being not only the pursuit of the larger portion of the community, but that for the promotion of which this institution was mainly founded, a portion of the time of each student will be given to work, so arranged as to be without detriment to his intellectual culture. In the three lower classes, whose studies are general and rudimental, all the students will be required to labor on the farm a certain number of hours each week. But, after the Sophomore year, no farm work will be required of the students, and their hours of labor will be chiefly devoted to scientific practice in the direction of their intended life employments.

VIII. The act of Congress of July the 2d, 1862, which grants land-scrip to the several States for the support of Agricultural Colleges, requires that all institutions which receive the benefit of that endowment shall have for

their *leading object* to give instruction in *Agriculture* and the *Mechanic Arts*, and that they shall moreover make provision for teaching the Military Tactics and Army Regulations of the United States. To meet these requirements, the Agricultural College of Pennsylvania made as extensive and thorough provisions as its finances permitted, while it had no endowment, and depended for support solely upon the insufficient income arising from students' fees. It instituted thorough courses of instruction in Agriculture, in General Science, and in Military Tactics, but from want of adequate funds it could give only partial instruction in the branches relating to the Mechanic Arts. Now that the income arising from the land-scrip granted by Congress to the State of Pennsylvania has been appropriated to this College by the act of Assembly of February 19th, 1867, the Trustees are enabled to adopt the requisite measures to make the College, in all essential points, fully respond to the object and requirements of the act of Congress. To this end, they have added and made provision for a thorough course of instruction in Mechanical and Civil Engineering, in the interests of the Mechanic Arts. It will thus be seen that the Agricultural College of Pennsylvania is now efficiently organized as a SCIENTIFIC SCHOOL of a high order in the educational interests of *industrial life*. At the same time, the Trustees have kept in mind the additional requirement of Congress, that purely Classical and Literary studies shall not be excluded. Therefore, such provisions have been made, that while the name of the institution continues to intimate that special attention is here paid to Agricultural instruction, yet our students are also afforded opportunities for the Legal, Medical and Clerical professions. Accordingly there are found upon our roll to-day the names of students who have already announced their purpose to prepare for these callings.

The Faculty have been selected with a scrupulous regard to the thorough performance of the educational work which the College has at present undertaken, and to the amount of the funds placed at the disposal of the Board of Trustees. Additions of *Professors*, of *courses of study*, and of *apparatus of instruction* will be made as they become necessary, for it is the purpose of the Board to make the College serve efficiently and in a liberal spirit the end for which it has received, from the State, the endowment granted by Congress.

IX. At the time of its organization it was the purpose of the founders of the College to extend its privileges to male students only; and for twelve years lady students were excluded. Within the current year several young ladies applied for admission, and after a careful consideration of the question the Trustees, on the 5th of September, voted to admit both sexes upon the same general conditions. It was felt that the important trust committed to the Board would not be fully administered while one half of the youth of our State were denied its advantages; and the experience of other institutions, several of them Agricultural, justified the expectation of good results from the co-education of the sexes.

Therefore, ladies are now admitted to the same courses of study as the gentlemen, are subject to the same general rules, and on the completion of their studies, will receive the same certificates and degrees. Such separation of the sexes, and variation of labor for instruction and exercise, as prudence dictates, will be carefully secured; but the privileges enjoyed will be equal, and the advantages derived from a residence at the College will be as great in one case as in the other.

Description of the Institution.

THE COLLEGE.

The College Building.—This is a plain, substantial structure of limestone, seated on a pleasant rise of ground, and is 240 feet in length, 80 feet in average breadth, and five full stories in height, exclusive of the basement; with ample Lodging rooms, Chapel, Library, Society Halls, Laboratories, Cabinets, Refectory and Infirmary, for 330 students. The whole is well heated, and well supplied with water. A large campus for exercise and drill, and extensive pleasure grounds, adjoin the building.

Other Buildings.—There are also a President's house with grounds attached, and one for the Vice President; the other Professors occupying sets of apartments in the main building.

THE LAND.

Its Position.—The College property consists of a tract of 400 acres, of which 100 have been set off as a Model and Experimental farm, and worked separately from the main college farm of 300 acres, though under the supervision of the Professor of Agriculture. The tract is in Harris township, Centre county, about 12 miles south of Bellefonte, and nearly equidistant from the opposite extremes of the State. It is near the middle, from north to south, of the broad rolling valley formed by the junction of Penn and Nittany valleys, which unite at the end of Nittany mountain, about 3 miles east of the College, with Tussey mountain on the south, and Muncy mountain on the north. The landscape is broad, varied and beautiful, the climate healthful, and the surrounding population intelligent, industrious and moral. The sale of intoxicating drinks within three miles of the College is prohibited by law.

The College Farm is now worked in five divisions or fields, of from 30 to 40 acres each, so as to ensure a regular succession of crops; the remainder of the tract being occupied by the college grounds, garden, orchard, and two pieces of woodland. The surface is moderately rolling, without any broken land or swamps; the soil is limestone with a large admixture of flint, and admirably adapted to the production of Wheat, Indian Corn, Oats, Barley, and the various kinds of Grasses. It responds freely to the use of lime, of which large dressings are now applied, and of plaster of Paris, and the various artificial fertilizers. All the bread and vegetables and most of the meat consumed by the students and employees are produced on the place, and its productiveness is increasing. The improved stock now consists of

Durham, imported Alderney and Holstein bulls, (the two former herd-book animals,) one pure and several grade Durham cows, and of several breeding swine of the Chester county breed.

THE FARM BUILDINGS are a large well arranged overshot barn, with double threshing floor, threshing house, corn cribs and root house attached, and stabling for mules and other stock below, an extensive hog pen, a tool house, and a plough house. A wash house and a slaughter house are also on the premises and conveniently placed, with roomy and well equipped carpenter and blacksmith shops.

THE GARDEN contains about six acres of prime land, and having all been subsoiled or trenched, and well limed and manured, is now highly productive. It has a stock of small fruit, such as currants, gooseberries, &c., and strawberries in profusion.

The apple orchard of twelve acres, is just coming into good bearing. Cherries are in great variety and abundance.

FACILITIES FOR INSTRUCTION AND IMPROVEMENT.

THE CHAPEL is large enough to seat about four hundred persons, and comfortably furnished with seats and a platform. Here, at morning roll-call, the students meet for reading the Scriptures, singing, and prayer by the members of the Faculty in turn. At 9 A. M. every Sunday the students and professors meet as a Bible Class; and at 3 P. M. there is also regular service by clergymen of the vicinity, or of the Faculty, acting as chaplains. It is also used for General Lectures.

THE LIBRARY belonging to the College contains about fifteen hundred volumes, embracing Scientific and Technical works, Memoirs, Scientific Essays, Agricultural and Educational works, &c., in English, French and German, forming the nucleus of a fine scientific library. Certain scientific periodicals, purchased by the College for the use of the different departments of instruction, are also added to the Library from time to time as they accumulate.

CHEMICAL LABORATORIES.—The importance of Chemistry in its applications to Agriculture and the Mechanic Arts, and its value as an element of liberal education, claim for it a prominent place in each of the courses. The College offers special facilities for this study; the stock of apparatus is large and complete. Illustrations in teaching are drawn, as far as possible, from familiar sources, and all instruction is imparted in such practical form as to make it applicable to the daily wants of life.

In addition to study by text-book and lecture in the class room, students are during a considerable portion of their course, employed from four to six hours per week in the chemical laboratory, to apply in practice what they have learned in theory. Each has charge of a quantity of apparatus and chemicals, which he uses under the eye of a teacher in studying the effect of different agents upon each other, and in acquiring a knowledge of chemi-

eal analysis. This study is made progressive, and carried on through successive classes after the first term of the Sophomore year, by which time he will have mastered the elements of Chemistry.

On entering the laboratory the student first studies the simplest principles of analysis, acquires the use of the blowpipe, &c., and learns to handle apparatus. In the higher classes he makes complete analyses of the different materials presented to him, first learning to determine the *quality* of the ingredients, afterwards their respective *quantities*. In these exercises, each student is given, as far as practicable, a course of work most applicable to his intended pursuit in life.

Three large laboratories, with all the necessary appliances, are provided for students, and a fourth for the use of the Professor of Chemistry. These rooms at present will accommodate about eighty students, working at the same time; and provision can readily be made for a greater number.

Apparatus and chemicals used in the laboratory may be purchased at the College. The cost will depend in a great measure upon the care and skill of the student. Ordinarily it need not exceed $15.00 for the Sophomore class, and $20.00 for the Junior. Apparatus which has been carefully used may be returned, subject to a discount of twenty-five per cent. on its cost, and the *actual* expense thus be much reduced.

Unusual facilities are offered to those who desire to make the study of chemical analysis a specialty. Druggists, medical students and others desiring a partial course in this branch may enter at any time, and will receive on leaving the college, a certificate in testimony of the work they have accomplished. Such students will be subject to the rules elsewhere stated in regard to special students.

All chemical work in the laboratory is accompanied by lectures, explaining the theory of analysis, reactions involved, &c.; such lectures being independent of the preliminary course in elementary chemistry.

To meet the wants of technical students a series of lectures in Technical Chemistry has been introduced into the Scientific Course. Students in this course will make extended excursions to manufactories and technical works where actual processes may be studied in detal.

Mineralogy and Crystallography.—Instruction in Mineralogy will be imparted by lectures and by practice in the laboratory. While the study will be chiefly that of the chemical properties of minerals, full attention will be paid to crystallographic and other physical properties which may aid in their identification.

Crystallography, the science of crystalline forms, is taught first as a pure theory, in the study of perfect forms, before the student is led to examine the perplexing modifications presented by Nature.

Illustration in the study of these sciences is furnished by a fine mineralogical cabinet and collections of crystal models.

Apparatus in Physics.—The principles of the important science of Physics, embracing the subjects of forces, general properties of matter, light,

heat, sound, electricity, &c., will be thoroughly imparted. A collection of apparatus for experimental illustration of these subjects is in possession of the College.

Students in Physics or Natural Philosophy are employed for two hours per week in laboratory work connected with this study. They are here taught the use of the galvanic battery, specific gravity apparatus, photographic camera, spectroscope, &c.

AGRICULTURE.—This study is designed to give to the student who pursues it a comprehensive and thorough knowledge of Agricultural principles and Methods. A farm of 300 acres is used to demonstrate the principles taught in the class room, affording students an opportunity to put in practice their theoretical knowledge of husbandry, and to study the processes from which the best results are obtained. Improved implements are used and their adaptation to the purposes of their construction is explained. Cattle of various improved breeds are kept, and their characteristics are rendered familiar to the student, from actual observation. Soiling of cattle is practiced, and the various forage plants suitable for this purpose are cultivated, their values compared, and accounts kept, that the economy of the system may be accurately ascertained. The system of mixed husbandry is the one adopted, the intention being to illustrate every method in use in agriculture, and afford the student the opportunity of becoming acquainted with all the details of farming; and, since most men, irrespective of profession, look forward to the time when they will be able to enjoy rural life by cultivating a portion of the earth, students in the Freshman classes of *all* the courses are required to study Agriculture, and all students below the Junior Class are required to engage in the practice of it. A number of skilled workmen, sufficient to carry on the operations of the farm without the aid of the students, is employed. So that the demand for the labor of the student on the farm may in no case interfere with his class-room exercises. Our chief object in requiring the practice of Agriculture is education, while at the same time healthful exercise is thus provided for the students.

BOTANY.—The Botanical course extends over one year. Students, after having acquired a sufficient knowledge of *Structural Botany*, are required to make practical application of it in studying the plants of the district.

At least four hours a week, during the entire year, will be given to *Analysis* of plants. To such students as have completed this course of study, lectures are delivered on Economic Botany. In these lectures, the weeds and useful plants of Cultivation, the native Flora and the Plants of commerce, with their natural history, modes of preparation and adulteration, and their general relation to the wants of man, are treated of.

Students who have shown an aptitude for the work, and who wish to prosecute this study further, have (under certain restrictions) access to the Library and Herbarium of the Professor of Botany, and also have the benefit of his personal supervision in their studies.

Diagrams and microscopes are used to illustrate the teachings of the class-room.

Throughout, the aim is to give a thoroughly practical turn to the studies of this department.

The College Herbarium contains several thousand species of plants. Most of them are from North America or Europe. Hence the species with which the farmer is most likely to have to deal are represented in the collection. It will be available for instruction in the institution.

The Geological Collection made by Prof. Rogers during the geological survey of the State, is in possession of the College, and will afford a rare opportunity of becoming acquainted with the Geology of Pennsylvania. In addition to this, there is quite an extensive collection of typical European rocks belonging to the College.

Frequent *excursions* are made with the classes. The neighboring valleys and mountains afford rare opportunities for the study of Botany, Physical Geography, Palæontology and Geology. The great synclinal and anticlinal Palæozoic waves east of the Alleghenies are here shown in every variety of position and angle of inclination; while good out-crops are to be seen of nearly all the subdivisions of Palæozoic rocks from the lowest to the coal measures.

Human Anatomy and Physiology.—Instruction in this study is rendered clear by the use of the articulated skeleton, dry preparations and charts and by occasional dissections of the more important organs of animals. From these facilities, with constant access to the laboratory and the lectures and direction of their medical studies by the proper Professors, young men intended for the medical profession enjoy advantages met with in few private offices; while, at the same time, they are advancing their general education.

Zoology and Comparative Anatomy.—Students who have completed the course in Human Anatomy and Physiology, enter next upon the study of the comparative Anatomy and Physiology of the brute creation, and in this way become acquainted with the structure and qualities of those animals which are of immediate service to man, and of those which are obnoxious to the household and to the cultivator of the soil. Particular emphasis is laid upon the habits of insects injurious to vegetation, and of those creatures which affect the health of domestic stock.

Surveying and Engineering.—The College is in possession of a Transit Compass and Chains, for practical instruction, and other instruments will be added to meet the wants of the student.

He also enjoys the great advantage of studying, under the guidance of his instructor, the mechanical principles involved in the structure and operations of the following Works, which are located in the vicinity of the College, viz.: *The Oak Hall Woolen Factory, The Bellefonte Water Works, Gas Works, Glass Works, Steam Planing Mills, Steam Flouring Mills, Smelting Furnaces,*

Forges, Foundries, and Steel Wire Works, The Snow-Shoe Coal Mines, and numerous other works, which are in successful operation, in the thriving industrial region, in the midst of which the College is situated.

Language and Literature.—In this department, as well as in the natural Sciences, the course of instruction aims to combine theory and practice—to teach the science with, and through the art. Hence, in the study of a language, ancient or modern, composition is used as an important help to the student, who is required not only to learn the rules of Etymology and Syntax, but also to apply them in the construction of sentences, and is also taught to examine the relations of languages that this acquaintance with one may facilitate his acquisition of others. By employing such aids, the classical student may, it is believed, obtain as thorough a knowledge of Latin and Greek as is imparted at colleges which are exclusively literary, and yet may find time to avail himself largely of the special advantages for scientific study, which this institution affords.

An elementary knowledge of French and German is recommended to all—even apart from the literary value of such studies—an account of the rich stores of information which those languages offer to the professional man and the student of science.

Since the ability to understand and to use aright his mother tongue, contributes to the usefulness as well as to the enjoyments of every man, no matter what may be his pursuits, it has been thought proper to require of all regular students the writing of essays and the careful study of our own language and its literature. The former study is so conducted that while the student is made familiar with our present forms and idioms he is also prepared for reading understandingly our early writers, such as Chaucer and Spenser; the study of the latter is chiefly through the critical reading of our best English writers, from Chaucer to Shakspeare, the main object being to introduce the student to the Literature itself, rather than to make him acquainted with its history.

Students' Societies.—There are two of these, named, respectively, the Washington and the Cresson Literary Societies. Each has a commodious hall, handsomely fitted up, and a library of standard and miscellaneous works. The ladies will soon organize a Literary Society for their improvement, to which the authorities of the College will extend the same privileges and conveniences as are now enjoyed by the gentlemen's Societies.

Armory.—This is a large room with proper racks, &c., and supplied with 80 stand of small arms and accoutrements, 50 cavalry sabres, belts, &c., and 12 foils and their appendages, for fencing. The College also has a number of tents, and two six-pounder brass field pieces with caissons, etc., complete.

Infirmary.—A large, well-aired, well-lighted and comfortably-furnished apartment in a quiet and isolated portion of the building, is set apart for the use of the sick, and supplied with all necessary medicines. This department is attended by a careful nurse, and its accommodations are given to the students without additional charge.

SPECIAL PREPARATION OF STUDENTS.

Intended Profession.—After a sufficient course of general preparation in study, the studies and employments of each student will be specially directed either to Agriculture, General Science, Mechanics, or higher Literature, as may be desired. Each one is therefore required, at the commencement of the second term of the Sophomore year, to present a written statement, from his parent or guardian, of the pursuit for which he is intended, and of such additional branches, if any, as he may wish to pursue, so that his exercises for the succeeding year may be duly provided for.

Irregular Students.—While there shall be room in the Institution, young men desirous of pursuing particular branches without graduating, will be permitted to do so, either as boarders or day students, on payment of the same charges as the class to which they respectively belong, and subject to the same rules as to labor. To such, upon their leaving the College, Certificates will be given, setting forth the special studies pursued by them, and their proficiency in them.

MILITARY INSTRUCTION AND UNIFORM.

Instruction in Infantry drill will be given two hours every week, by competent officers, and a course of Lectures on Tactics and Army Regulations will be delivered each year.

Students who have conscientious scruples against bearing arms, or whose parents or guardians request in writing that they may be exempted for conscience' sake, will not be required to drill; but they, and others who may be exempted for reasons satisfactory to the President, will work three hours on Saturday during such parts of the day as may be assigned to them.

The College Uniform consists of a short jacket, vest and pants of dark blue broad-cloth, with the State button, and a blue cloth cap. The cost of the suit is from $25 to $30. Those who desire it are permitted to wear, when not on drill, a sack coat instead of the jacket, but of the same material and having the State button.

Hereafter the uniform will be strictly required to be worn on Sundays in Chapel, and on all dress occasions, especially when students are permitted to leave the College premises on visits. No other clothes will therefore be necessary, except a warm overcoat, a full supply of under-garments, one or more coarse suits for working purposes, and two pairs of strong boots.

LABOR.

The Labor Rule, at present, requires an average of *ten hours* labor each week, by each regular student in the Preparatory, Freshman and Sophomore Classes, which is rendered in details of four hours, either in the fore or afternoon, on alternate days, except on Saturdays, when both labor and recitations are suspended. The work is on the farm, or in the garden, barn, work-shop, laundry, or Steward's department, as the case may be, under proper superintendence.

THE MECHANICAL DEPARTMENT is in charge of a skillful and experienced Master Mechanic, with proper blacksmith and carpenter shops, and other appliances for the repairs of the building and fixtures and of the farming implements, and for the manufacture of such new articles for use as may be constructed on the place. In this work he is to be assisted, when necessary and desirable for the purposes of instruction, by students during their regular work hours.

PECUNIARY COMPENSATION FOR WORK.—A limited number of students desirous of remaining at the College during vacations, are retained to assist in the work of the farm, garden, &c., and paid a reasonable compensation, with board, lodging and washing, and the use of the library, &c. During term time such students as desire employment, and, without interfering with their studies, can perform labor in addition to that which may be regularly required of them, will be employed at fair wages upon all occasions when extra help may be needed.

THE CENTRAL EXPERIMENTAL FARM.

ITS OBJECTS.—This is one of three farms, the others being in Chester and Indiana Counties, directed by law to be established and conducted as Model Farms, equipped with the most convenient kind of buildings and apparatus, and farmed in the best manner by hired labor, to serve as examples in successful practical agriculture; and also as Experimental Farms, to test by experiments in sufficient series, and to decide by results, those numerous doubtful questions, as to modes of culture, relative value of manures, kinds of seeds, succession of crops, qualities of live stock, &c., which perplex the farmer; and to make known the results, when sufficiently verified, to the public. The greater portion of each tract is devoted to the general Model Farm, and the remainder to the trial of experiments.

ADVANTAGES TO THE STUDENT.—In both respects they will be highly useful and instructive to the inquiring farmer; and the one near this Institution holds out much promise of benefit to the agricultural student. By attention to its processes and its crops, which are in great variety as to culture, manure, seeds, and treatment on the Experimental Plots, and by consulting the periodical records of each, which are regularly made from weight and measure, and other data, as to soil, weather, &c., and open to the inspection of all, a certainty of knowledge, based on a series of similar experiments for a succession of years, may be arrived at, which by no other means, and by no private agency is attainable.

Students are furnished with plans and descriptions of these Experimental Plots, to enable them at all times to know the crop and treatment of each division, without the necessity of application to the Superintendent for that purpose.

SESSIONS, VACATIONS, CHARGES, ETC.

Sessions.—The College Year is divided into two Sessions:

The Spring Session of 24 weeks, beginning on Friday preceding the second Monday in February, and ending on the last Friday in July.

The Fall Session of 16 weeks, beginning on Friday preceding the last Monday in August, and ending on the third Friday in December.

Vacation.—The Summer Vacation is four weeks, and the Winter, eight. Entrance on the first day of the Session will greatly benefit the student.

The Charge to boarders is $100 for the Spring, and $70 for the Fall Term, which is in full for tuition, boarding, washing and fuel, with $5 a year for room rent, a deposit of $5 to meet damages, if any, and $3 a year for the use of such articles of furniture as are provided by the College. Students will be supplied with single bedsteads, tables, chairs, mattresses and bolsters, but are required to find all their bed clothing. They will need two blankets, three sheets, two bolster cases, one pillow, and three pillow-cases, a comfortable and a spread. All articles must be marked with the full name of the owner.

All College charges are payable in advance, at the beginning of the respective sessions.

Books and Stationery are supplied at city retail prices. Instruction upon the Piano or Organ will be given at the rate of $10 for 24 lessons, and $3 per quarter for the use of instrument in practicing.

ANNUAL HARVEST HOME.

During the last three days of the Spring Term, that is, from Tuesday till Friday, both included, of the last week in July, the College will be open to its friends from a distance, and such entertainment as can be given, will be at their service.

Persons Included in this Invitation, are the parents or guardians of all students on the roll during the session, former graduates of the College, editors of the newspaper press, and Judges on the Trial of Implements,—all of whom on their arrival, will register their names and receive a ticket, which will secure the hospitalities of the Institution.

On Monday, Agricultural implements for trial or exhibition will be received.

On *Tuesday*, there will be a trial of mowing machines.

On Wednesday, the annual meeting and exhibition of the Alumni will be held, and the trial of reapers will take place.

On Thursday, there will be a trial of plows.

These trials of implements will begin at 1.30 P. M.

During the evenings, lectures and addresses, by the faculty and others, will be delivered, and in day time, the College and farm and the Experimental farm will be open for visitation.

INVENTORS AND PROPRIETORS of agricultural implements are invited to be present, with their implements for exhibition and trial; and all persons accepting this invitation are expected to notify the President on or before July 22d.

MEANS OF ACCESS.

A new turnpike from the College gate to the end of Nittany mountain is now completed, affording a good continuous road to Bellefonte, with a daily stage and mail in both directions.

Bellefonte is connected with Tyrone, on the Pennsylvania Central Railroad, by two daily trains to and from that station, and with Lock Haven on the Philadelphia and Erie railroad in the same manner. By Tyrone, passengers from the south-eastern, southern and south-western portions of the State, and by Lock Haven, those from the north-eastern, northern and north-western, can daily reach Bellefonte, where the stage to the College meets them every afternoon. The return stage leaves the College every morning in time for the trains east and west from Bellefonte.

A railroad, connecting Lewisburg, on the Philadelphia and Erie Railroad, with Tyrone, on the Pennsylvania Central, and passing near the College grounds, has been located and partly finished. It is probable it will be completed within a year.

Good hotel accommodations for parents and other visiting friends can be had near the College gate.

The address of students and other persons connected with the College is,

"AGRICULTURAL COLLEGE P O.,
CENTRE COUNTY, PA."

RULES.

STUDENTS ARE REQUIRED:

1. To conduct themselves in an orderly and gentlemanly manner at all times.

2. To be punctual in their attendance upon all College exercises.

3. To avoid all boisterous conduct in the College Building.

4. To observe neatness in dress at prayers, at meals and at recitations.

5. To wear the prescribed uniform on military duty, at Sabbath services, and when permitted to be away from the College.

6. To keep their rooms neat and clean.

7. To observe the regulations concerning the association of the sexes while remaining near the College, as well during vacation as in term time.

STUDENTS ARE FORBIDDEN:

8. To be absent from the College Building during study hours, without permission.

9. To make or receive visits which may conflict with proper attention to study.

10. To use musical instruments during study hours.

11. To possess or use any keys belonging to rooms which they have no right to enter.

12. To enter the kitchen or laundry departments, or be present with working parties, without permission.

13. To use tobacco in the recitation rooms, chapel and halls.

14. To smoke in or about the barns or out-buildings, and while on detail.

15. To throw refuse matter of any kind from the windows.

16. To discharge fire-arms in the building or on the campus.

17. To walk or ride with students of the opposite sex, or to meet such students in the Parlor, or any other place, except by special permission of the President and the Preceptress.

Calendar.

1871.

Fall Term began,	Friday, Aug. 25th.
Meeting of Delegates to Elect Trustees,	Wednesday, Sept. 6th.
Annual Meeting of Trustees,	Wednesday, Sept. 6th.
Senior Examination begins,	Monday, Nov. 20th.
Senior Vacation begins,	Thursday, Nov. 23d.
Anniversary of Cresson Society,	Friday, Nov. 24th.
Thanksgiving—Holiday,	Thursday, Nov. 30th.
Baccalaureate Sermon,	Sunday, Dec. 10th.
Term Examination begins,	Monday, Dec. 11th.
COMMENCEMENT DAY,	Thursday, Dec. 14th.
Fall Term ends,	Friday, Dec. 15th.

Vacation of Eight Weeks.

1872.

Students to Report,	Friday, Feb. 9th.
Studies and Exercises will begin,	Monday, Feb. 12th.
Holiday—Washington's Birthday,	Thursday, Feb. 22d.
Anniversary of Washington Society,	Friday, June 7th.
Holiday—Independence Day,	Thursday, July 4th.
Term Examination begins,	Monday, July 22d.
Trial of Mowers,	Tuesday, July 23d.
Annual Meeting of Alumni,	Wednesday, July 24th.
Trial of Reapers,	Wednesday, July 24th.
Trial of Plows,	Thursday, July 25th.
Spring Term ends,	Friday, July 26th.

Vacation of Four Weeks.

Fall Term opens, Students report,	Friday, Aug. 23d.
Studies and Exercises begin,	Monday, Aug. 26th.
Meeting of Delegates to Elect Trustees,	Wednesday, Sept. 4th.
Annual Meeting of Trustees,	Wednesday, Sept. 4th.

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